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EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: O-03

[X] Original [ ] Amendment Number:

Contract Number	Contract Period	Option Period Number
EP-C-07-028	Base	

Title of Work Assignment: "Fuel Parameter Influences on Vehicle Emissions for EPAct Tesing"

Contractor: Southwest Research Institute

Specify Section and Paragraph of Contract SOW:
Task 1 of the Performance Work Statement

Purpose: [X] Work Assignment Initiation [] Work Assignment Close-Out
[] Work Assignment Amendment [] Incremental Funding
[] Work Plan Approval

Periods of Performance
From: Effective Date To: 06/27/08

Comments: Fuel Modeling for EPact Testing

[] Superfund — **Accounting and Appropriations Data** — [] Non-Superfund

Line	DC (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee	LOE hours (Professional)
Contract Period: 1		
This Action	Ex. 4 - CBI	Ex. 4 - CBI
Total		

Work Plan / Cost Estimate Approvals

Contractor WP Dated :	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Rafal Sobotowski Rafal S. Sobotowski (Signature) 2/6/2008 (Date)	Branch/Mail Code ASD, S-89 Phone Number 734/214-4828 Fax Number 734/214-4816
Project Officer Name Carl Scarbro Carl (Signature) 2/6/2008 (Date)	Branch/Mail Code ASD S-87 Phone Number 734/214-4209 Fax Number 734/214-4939
Other Agency Official Name _____ (Signature) (Date)	Branch/Mail Code Phone Number Fax Number
Contracting Official Name: TAMMY THOMAS (Signature) 2/8/08 (Date)	Branch/Mail Code CPOD Phone Number 513-487-2030 Fax Number 513/487-2109

Contractor Acknowledgement of Receipt and Approval of Workplan *(Signature and Title)* | Date

EPA Form 1900-69 (Rev. 07-95)

Performance Work Statement

Contract EP-C-07-028	Work Assignment Number 0-03
Issuing Office	Environmental Protection Agency 2000 Traverwood Drive Ann Arbor, MI 48105-2498
Contractor	Southwest Research Institute 6220 Culebra Rd. San Antonio, TX 78228-0510
Title	Fuel Parameter Influences on Vehicle Emissions for EPAct Tesing

Background

Section 1506 of the Energy Policy Act of 2005 (Energy Act) requires EPA to produce an updated fuel effects model representing the 2007 light duty gasoline fleet, including determination of the emissions impacts of increased renewable fuel use.

The use of ethanol in gasoline has increased more than five-fold since 2000, and it is likely that its use will continue to expand into the next decade. It is also likely that use of ethanol blends at 10% or greater will expand significantly.

Recent investigation related to the Mobile Source Air Toxics (MSAT2) rulemaking has shown that hydrocarbon emissions from light duty gasoline vehicles increase significantly as test temperature is decreased. As a result, the MSAT2 rulemaking promulgated Non-Methane Hydrocarbon (NMHC) standards at 20°F. However, this being a relatively new area of study, fuel effects data at temperatures lower than 75°F is scarce for use in emissions models.

Hydrocarbon (HC) emissions are composed of hundreds of compounds, some of which have been identified by the EPA as air toxics. The Clean Air Act directs EPA to set standards to reduce air toxics emissions. Most existing data on the fractional relationship between the various air toxics and HC emissions has been established using vehicles meeting Tier 0 emissions standards (now more than 10 years old), and burning fuels that did not contain ethanol.

Scope and Objectives

This Work Assignment (WA) is to assure that the Phase 3 test fuels to be used in WA 0-1 of this contract are correctly specified and will meet the needs of that test program.

Task 1 Work Plan Development

The contractor shall submit a work plan for EPA approval within 15 calendar days after receipt of this WA. The work plan shall include a description of how the tasks described below are to

be performed.

Task 2 Quality-Assurance Project Plan (QAPP)

If the contractor uses standard statistical methods then no formal QAPP is required, however, the contractor shall indicate, in the work plan, what statistical tools are to be used and how they are to be used to produce the deliverables in Task 4. If standard statistical methods are not used, the contractor shall notify the Work Assignment Manager (WAM) immediately.

Task 3 Generating Fuel Matrices

The contractor shall take 5 gasoline fuel parameters along with numeric ranges (levels) for them and generate fuel matrices that are statistically optimized to resolve differences between the five parameters as to their effect on vehicle exhaust emissions. In addition to the design the contractor shall provide appropriate statistics concerning the 'efficiencies' of the various designs to predict the effect of the 5 parameters on vehicle emissions.

The 5 parameters are Reid Vapor Pressure (RVP), Distillation Temperature at 50 Percent Evaporated (T50), Distillation Temperature at 90 Percent Evaporated (T90), Fuel Volume Percent Aromatics, and Volume Percent Ethanol. The matrices will be developed from the five parameters at 2 levels for RVP, 4 levels for T50, 2 levels for T90, 2 levels for volume percent aromatics, and 4 levels for volume percent ethanol. The targets for the various levels will be provided to the contractor by the Work Assignment Manager via written technical direction.

Task 4 Reporting and Deliverables

Fuel matrix designs and associated statistics shall be delivered on or before March 15, 2008. The format for the matrix shall be in Microsoft Excel and the statistics in a common text file format that the contractor has on hand. No formal written report is required.

Work Assignment Manager (WAM)	Rafal Sobotowski, 734/ 214-4228
Alternate WAM	Constance Hart, ASD 734/214-4340